

Fuel Cell Cathode Catalyst

Abstract

5 A fuel cell cathode catalyst is provided which comprises nanostructured elements comprising microstructured support whiskers bearing nanoscopic catalyst particles. The nanoscopic catalyst particles are made by the alternating application of first and second layers, the first layer comprising platinum and the second layer being an alloy or intimate mixture of iron and a second metal selected from the group consisting of Group VIb metals, Group VIIb metals and Group VIIIb metals other than platinum and iron, where the atomic ratio of iron to the second metal in the second layer is between 0 and 10, where the planar equivalent thickness ratio of the first layer to the second layer is between 0.3 and 5, and wherein the average bilayer planar equivalent thickness of the first and second layers is less than 100 Å. A method of making such nanoscopic catalyst particles comprising the alternate steps of vacuum deposition of platinum and vacuum deposition of an alloy or intimate mixture of iron and a second metal is also provided.

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